

Remarks

The instant Office Action dated December 17, 2007, notes the following objection and rejections: claim 1 is objected to due to informalities; claims 1-5 and 7-14 stand rejected under 35 U.S.C. § 102(b) over Johnsgard *et al.* (US Patent No. 6,200,634); claims 1-4, 7-8 and 11-13 stand rejected under 35 U.S.C. § 102(b) over Treur *et al.* (US Patent No. 6,146,343); claims 1-5 and 7-14 stand rejected under 35 U.S.C. § 102(b) over Denton *et al.* (WO 01/50109); and claim 6 stands rejected under 35 U.S.C. § 103(a) over Johnsgard.

Applicant respectfully traverses each of the § 102(b) rejections of claims 1-5 and 7-14 because the cited portions of the Johnsgard, Treur and Denton references do not correspond to the claimed invention and because the Office Action fails to provide adequate detail regarding the alleged correspondence between the cited references and the claimed invention. In order to comply with 35 U.S.C. § 132, sufficient detail must be provided by the Examiner regarding the alleged correspondence between the claimed invention and the cited reference to enable Applicant to adequately respond to the rejections. *See, also*, 37 CFR 1.104 (“The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.”) and M.P.E.P. § 706.02(j), (“It is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply.”) In this instance, the Office Action has not provided any specific detail regarding the alleged correspondence between the cited references and any aspect of the claimed invention. The Office Action simply cites to various figures without providing any specific correspondence between elements of those figures and the various aspects of the claimed invention.

In an effort to facilitate prosecution, Applicant has reviewed the cited figures and attempted to ascertain that which is being relied upon by the Office Action; however, Applicant submits that the cited references do not correspond to numerous aspects of the claimed invention and appear to be largely unrelated to the claimed invention. For example, none of the cited references teach generating an electric signal responsive to radiation measured from a backside of a wafer and maintaining the wafer at a constant temperature during a deposition cycle by keeping the electrical signal constant during the deposition cycle. For instance, various embodiments of the preset invention are directed towards detecting an optical characteristic of a wafer bottom at the beginning of a deposition

process, and maintaining the temperature of the wafer in response to the detected optical characteristic during the deposition (*e.g.*, the electrical signal is kept about constant). The following discussion particularly addresses the lack of correspondence between each of the cited references and the claimed invention.

Regarding the Johnsgard reference, the cited portions relate to a rapid thermal processing (RTP) chamber in which an optical sensor 526 is used to determine the actual temperature of a wafer. *See, e.g.*, Figure 5 and Col. 9:35-56. The cited portions of Johnsgard do not mention any deposition cycle or keeping an electrical signal generated from the radiation measured from the backside of the wafer constant during the deposition cycle. Applicant notes that Applicant's disclosure distinguishes RTP equipment as taught by Johnsgard, which consider true wafer temperature measurements for which the emissivity of the wafer has to be known, from the claimed invention. *See, e.g.*, Paragraph 0032 of Applicant's disclosure.

Regarding the Treur reference, the cited portions relate to chemical mechanical polishing (CMP) processing in which optical endpoint detection is used to measure the thicknesses of layers. *See, e.g.*, Figure 3 and Col. 2:20-32 and Col. 2:58-67. The cited portions of Treur make no mention of any deposition cycle, keeping an electrical signal generated from the radiation measured from the backside of the wafer constant during the deposition cycle or controlling the temperature of the wafer during the deposition cycle. Applicant submits that the cited portions of the Treur reference are unrelated to the claimed invention.

Regarding the Denton reference, the cited portions relate to using the band-edge characteristics of a wafer to measure the temperature of a substrate by passing light through the substrate. *See, e.g.*, Figure 4 and the Abstract. For example, Denton uses optical fibers 199a to deliver IR radiation to the under side of wafer 135, some of the IR radiation passes through the wafer 135 and impinges on optical system 195. *See, e.g.*, page 10:10-19. Thus, the cited portions of Denton do not teach monitoring radiation from the bottom side of the wafer as in the claimed invention. Applicant submits that the cited portions of Denton also do not mention keeping an electrical signal generated from the radiation measured from the backside of the wafer constant during a deposition cycle.

In view of the above, the cited portions of the Johnsgard, Treur and Denton references do not correspond to the claimed invention. Accordingly, the § 102(b)

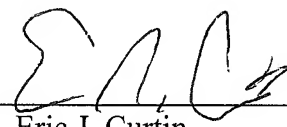
rejections of claims 1-5 and 7-14 are improper and Applicant requests that they be withdrawn. Should any rejection based upon the Johnsgard, Treur or Denton reference be maintained, Applicant respectfully requests that the Examiner specifically identify which elements of the cited references are being asserted as corresponding to specific aspects of the claimed invention.

Applicant respectfully traverses the § 103(a) rejection of claim 6 because the cited portions of the Johnsgard reference do not correspond to the claimed invention as discussed above in relation to the § 102(b) rejection of claim 1. In at least this regard, the § 103(a) rejection of claim 6 is improper because claim 6 depends from claim 1. Accordingly, Applicant requests that the § 103(a) rejection of claim 6 be withdrawn.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063.

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